

INITIAL REVIEW ENGINEERING REPORT  
PMN: 18-0054

Focus Ready Draft 12/18/2017

ENGINEER: Lopez \ LMK

PV (kg/yr):

SUBMITTER:

USE:

Polymer Exemption case (E1). All analogs are

OTHER USES: No other uses found.

MSDS: Yes

Label: No

Gen Eqpt: Hand protection: Use appropriate chemically resistant gloves as determined by an evaluation of glove performance characteristics and the hazards and potential hazards identified, including but not limited to butyl, natural and synthetic rubber, nitrile, or neoprene. // Eye protection: Wear face shield if splashing hazard exists. Tightly fitting safety goggles (chemical goggles). // Body protection: Body protection must be chosen based on level of activity and exposure. // General safety and hygiene measures: Work place should be equipped with a shower and an eye wash. Remove contaminated clothing. Contaminated equipment or clothing should be cleaned after each use or disposed of. Contact lenses should not be worn. Hands and/or face should be washed before breaks and at the end of the shift.

Respirator: Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination. Observe OSHA regulations for respirator use (29 CFR 1910.134).

Health Effects: Skin corrosion/irritation. Serious eye damage/irritation. Skin Sensitization. Irritating to respiratory system.

TLV/PEL:

CRSS :

Chemical Name: [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

S-H2O: 1E-06 g/L @

VP: 1.0E-6 torr @

MW: [REDACTED] [REDACTED] [REDACTED]

Physical State and Misc CRSS Info:

Neat: Solid (est) Mfg: Solution: [REDACTED] PMN substance [REDACTED]

[REDACTED] Proc/Form: Solution: [REDACTED] PMN substance in [REDACTED]

[REDACTED] End Use: Destroyed. The structure as drawn is representative. The submitter does not provide compositional data for the [REDACTED] [REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED] by GPC. This is for the polymer intermediate before the reaction with the final feedstock [REDACTED]; the resultant PMN substance becomes insoluble in the THF solvent used in GPC analysis. Submitted Data: None. The MSDS is for a solution of the PMN substance in hydrocarbon/ketone solvents. Estimated Data: BP > 500°C (High MW); VP < 0.000001 torr (High MW); WS < 0.000001 torr (structure).

Consumer Use: No

SAT (concerns) (12/05/2017):

Related Cases and Misc SAT Info:

Analog: [REDACTED] [REDACTED]

Migration to groundwater: Negligible

PBT rating: P3B1T2

Health: 1-2 Dermal, Drinking Water, Inhalation

Eco: 1 No releases to water

OCCUPATIONAL EXPOSURE RATING: [REDACTED]

NOTES & KEY ASSUMPTIONS:

Occupational exposure and environmental releases were estimated using the 9/30/2013 version of ChemSTEER tool. Input to ChemSTEER tool includes information from: the PMN submission, physical / chemical properties, relevant past cases, and the [REDACTED]

[REDACTED]. [REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED] Therefore, only manufacture and use are assessed in this IRER. SAT concerns are for dermal, drinking water, and inhalation exposures. Migration to groundwater is negligible. // The following same submitter, similar use past cases was referenced for consistency: [REDACTED] [REDACTED]

[REDACTED] All past cases were import only, therefore, they did not assess MFG. // MFG: This IRER assesses releases from equipment cleaning to uncertain media and from stack air to air. It also assesses dermal exposures from loading product into drums. // USE: Releases were assessed from container and equipment cleaning to uncertain media (consistent with all past cases). Releases were assessed from [REDACTED]

[REDACTED] (consistent with all past cases). Dermal exposure and inhalation exposures from [REDACTED] [REDACTED] were assessed (consistent with all past cases). This IRER also assesses inhalation exposure from [REDACTED] [REDACTED] (consistent with [REDACTED])

POLLUTION PREVENTION CONSIDERATIONS:

None.

EXPOSURE-BASED REVIEW: No

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MFG:

Number of Sites/ Location:

Days/yr:

Basis: Submission specifies . CS calculates PMN/batch.

Process Description: (per submission)

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Air

Output 2: kg/site-day over from site  
or kg/site-yr from site or kg/yr-all sites  
to: air (per submission)

from: Stack Air Releases

basis: User-Defined Loss Rate Model. The submission estimates released through stack air.

Incineration

Conservative: kg/site-day over from site  
or kg/site-yr from site or kg/yr-all sites  
to: to incineration (per submission)  
from: Equipment Cleaning Losses of Liquids from a Single, Large Vessel

basis: EPA/OPPT Single Vessel Residual Model, CEB standard 1% residual. The submission states that reactor rinse used for the resin will be disposed by incineration. RAD assesses this release using the standard model to incineration.

RELEASE TOTAL

kg/yr - all sites

OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Tot. # of workers exposed via assessed routes: ■

Basis: The submission estimates up to ■ workers may be exposed. RAD assumes that all workers perform all activities and that all workers may be exposed at the highest potential exposures for each physical form, as conservative.

Inhalation:

negligible (VP < 0.001 torr), mist generation not expected

Dermal:

Exposure to [REDACTED] at [REDACTED] concentration

High End:

> Potential Dose Rate: [REDACTED] mg/day over [REDACTED] days/yr

> Lifetime Average Daily Dose: [REDACTED] mg/day over [REDACTED] days/yr

> Average Daily Dose: [REDACTED] mg/day over [REDACTED] days/yr

> Acute Potential Dose: [REDACTED] mg/day over [REDACTED] days/yr

Number of workers (all sites) with dermal exposure: [REDACTED]

Basis: Loading Liquid Product into Drums; EPA/OPPT 2-Hand Dermal Contact with Liquids Model. Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years.

INITIAL REVIEW ENGINEERING REPORT

PMN: 18-0054

USE:

Number of Sites/ Location:

unknown site(s)

Days/yr:

Basis: The submission states that PMN imported. RAD assumes , as conservative. The submission did not provide other estimates for the use.

Process Description: Processed PMN imported into US -->

PMN destroyed (per submission, CRSS, and )

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Water or Incineration or Landfill

Conservative: [REDACTED] kg/site-day over [REDACTED] days/yr from [REDACTED] sites  
or [REDACTED] kg/site-yr from [REDACTED] sites or [REDACTED] kg/yr-all sites  
to: Uncertain

from: Equipment Cleaning Losses of Liquids from Multiple Vessels  
basis: EPA/OPPT Multiple Process Vessel Residual Model, CEB standard  
2% residual. The submission does not address this release. RAD assesses  
using the standard model.

Air

Typical: [REDACTED] kg/site-day over [REDACTED] days/yr from [REDACTED] sites  
or [REDACTED] kg/site-yr from [REDACTED] sites or [REDACTED] kg/yr-all sites  
Worst Case: [REDACTED] kg/site-day over [REDACTED] days/yr from [REDACTED] sites  
or [REDACTED] kg/site-yr from [REDACTED] or [REDACTED] kg/yr-all sites  
to: Air (4%), Incineration or Landfill (96%) (per [REDACTED]  
[REDACTED])

from: [REDACTED]

basis: [REDACTED] [REDACTED]  
[REDACTED] Submission does not estimate releases, but indicates  
[REDACTED]  
[REDACTED] [REDACTED] [REDACTED]  
[REDACTED] [REDACTED]  
[REDACTED] [REDACTED]  
[REDACTED]

are disposed to either incineration or landfill. It is assume that the  
shops use a dry filter with an average capture efficiency of 96%.

Incineration or Landfill

Typical: [REDACTED] kg/site-day over [REDACTED] days/yr from [REDACTED] sites  
or [REDACTED] kg/site-yr from [REDACTED] sites or [REDACTED] kg/yr-all sites  
Worst Case: [REDACTED] kg/site-day over [REDACTED] days/yr from [REDACTED] sites  
or [REDACTED] kg/site-yr from [REDACTED] sites or [REDACTED] kg/yr-all sites  
to: Air (4%), Incineration or Landfill (96%) (per [REDACTED]  
[REDACTED])

from: [REDACTED]

basis: [REDACTED] [REDACTED]  
[REDACTED] Submission does not estimate releases, but indicates  
[REDACTED]  
[REDACTED] [REDACTED] [REDACTED]  
[REDACTED] [REDACTED]  
[REDACTED] [REDACTED]  
[REDACTED]

are disposed to either incineration or landfill. It is assume that the  
shops use a dry filter with an average capture efficiency of 96%.

Incineration or Landfill



High End: [REDACTED] kg/site-day over [REDACTED] days/yr from [REDACTED] sites  
or [REDACTED] kg/site-yr from [REDACTED] sites or [REDACTED] kg/yr-all sites  
to: Landfill or Incineration (per [REDACTED]  
[REDACTED])

from: Cleaning Liquid Residuals from Small Containers Used to Transport  
the Raw Material

basis: EPA/OPPT Small Container Residual Model, CEB standard 0.6%  
residual.

RELEASE TOTAL

[REDACTED] kg/yr - all sites

#### OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Tot. # of workers exposed via assessed routes: [REDACTED]

Basis: [REDACTED] estimates [REDACTED]  
workers per site may be exposed [REDACTED]. RAD assumes that all  
workers perform all activities and that all workers may be exposed at  
the highest potential exposures for each physical form, as conservative.

Inhalation:

Exposure to Particulate (non-volatile) (Class I)

Upper Bound:

- > Potential Dose Rate: [REDACTED] mg/day over [REDACTED] days/yr
- > Lifetime Average Daily Dose: [REDACTED] mg/kg-day over [REDACTED] days/yr
- > Average Daily Dose: [REDACTED] mg/day over [REDACTED] days/yr
- > Acute Potential Dose: [REDACTED] mg/day over [REDACTED] days/yr

Number of workers (all sites) with inhalation exposure: [REDACTED]

Basis: [REDACTED]; OSHA PNOR PEL-Limiting Model. Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years. Concentration: Cm = 3.75 mg/m<sup>3</sup>; exposure duration: h = 8 hr/day

NOTE: The respirator class is: I. Particulate (including solid or liquid droplets).

#### INHALATION MONITORING DATA REVIEW

1) Uncertainty (estimate based on model, regulatory limit, or data not specific to industry): [REDACTED]

2)a) Exposure level > 1 mg/day? [REDACTED]

OR

b) Hazard Rating for health of 2 or greater? [REDACTED]

=> Inhalation Monitoring Data Desired? **No**

Dermal:

Exposure to [REDACTED] at [REDACTED] concentration

High End:

- > Potential Dose Rate: [REDACTED] mg/day over [REDACTED] days/yr
- > Lifetime Average Daily Dose: [REDACTED] mg/day over [REDACTED] days/yr
- > Average Daily Dose: [REDACTED] mg/day over [REDACTED] days/yr
- > Acute Potential Dose: [REDACTED] mg/day over [REDACTED] days/yr

Number of workers (all sites) with dermal exposure: [REDACTED]

Basis: [REDACTED]; EPA/OPPT 2-Hand Dermal Immersion in Liquid Model. Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years.